

# One World, One Internet (Many Futures)



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ACM  
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# Overview

- ⦿ Quick Internet Basics
- ⦿ ICANN is...
- ⦿ Internet Futures
- ⦿ Your turn!

# Quick Internet Basics

# History of the Internet Part I

1969



ARPANET, first network run on packet switching technology, created

1974



Transmission Control Protocol/Internet Protocol (TCP/IP) designed by Vint Cerf and Bob Kahn

1989

HTTP://

Tim Berners-Lee invents World Wide Web and HTTP

1993



Mosaic Browser released, popularized the WWW

# History of the Internet Part II

1998

2004

2006

2007

2016



ICANN incorporated



Google founded



Mark Zuckerberg  
launches Facebook  
in Cambridge, MA



Twitter launched,  
first Tweet  
"just setting up  
my twttr"



Apple launches  
iPhone



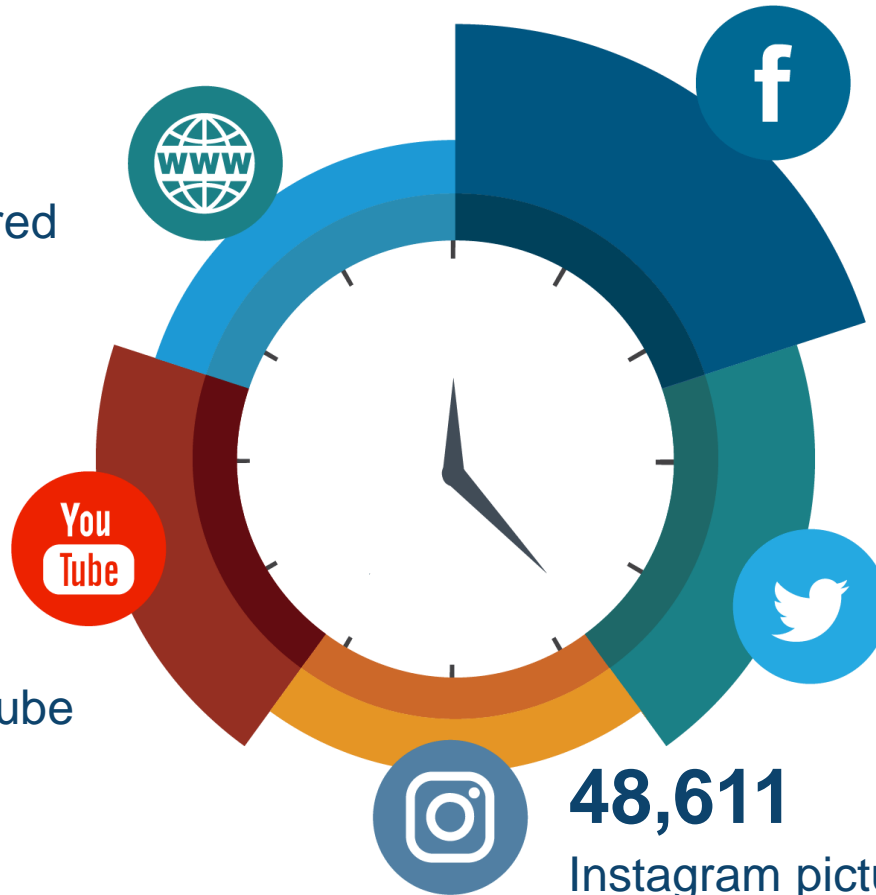
NTIA transfers  
oversight of IANA  
functions to ICANN

# The Internet in 60 Seconds...

According to CIO Media and The Independent:  
**every minute:**

**70**  
Domains Registered

**300**  
hours of video  
uploaded to YouTube



**31.5M**  
Facebook  
messages  
posted

**350,000**  
Tweets  
tweeted

**48,611**  
Instagram  
pictures  
posted

# Web Addressing: Unique Names and Numbers

Anything connected to the Internet – including computers, mobile phones and IoT – has a unique number called its IP (Internet Protocol) address.



This address is like a postal address. It allows messages, videos and other packets of data to be sent from anywhere on the Internet to the device that has been uniquely identified by its IP address.

IP addresses can be difficult to remember, so instead of numbers, the Internet's domain name system uses letters, numbers and hyphens, to form a name that is easier to remember.



IPv4: 192.168.111.1

IPv6: 2001:0db8:85a3:0000:0000:8a2e:0370:7334

# Who “Owns” a URL?

## Registry

A domain name registry manages top-level domain names. They create domain name extensions, set the rules for that domain name, and work with registrars to sell domain names to the public.



## Registrar

The registrar is an accredited organization that sells domain names to the public.

## Registrant

The person or company who registers a domain name. When changes are made to the domain, their registrar will send the information to the registry to be updated and saved in the registry's database.

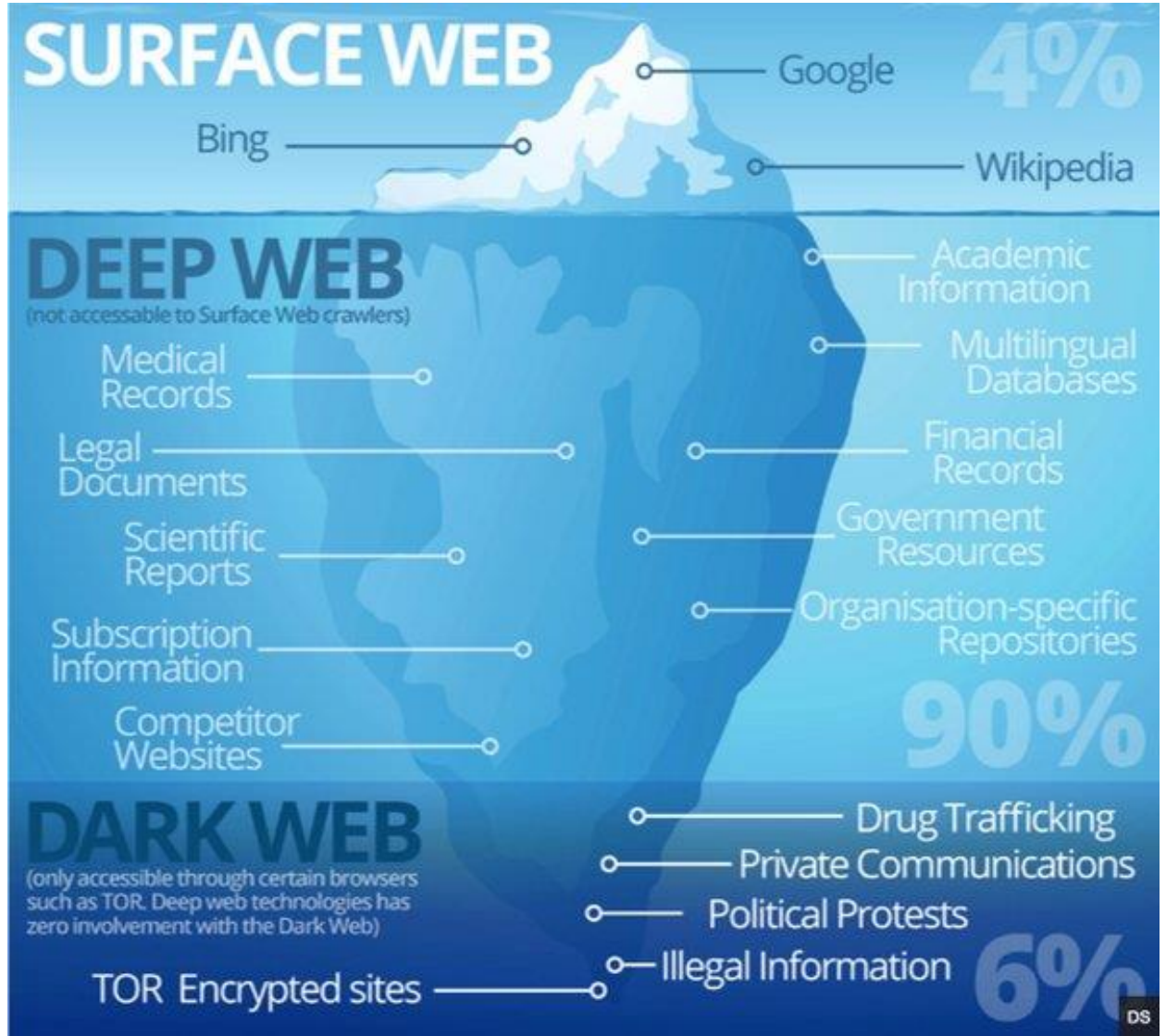
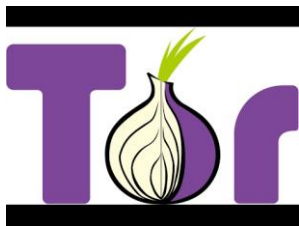




# Deep and Dark

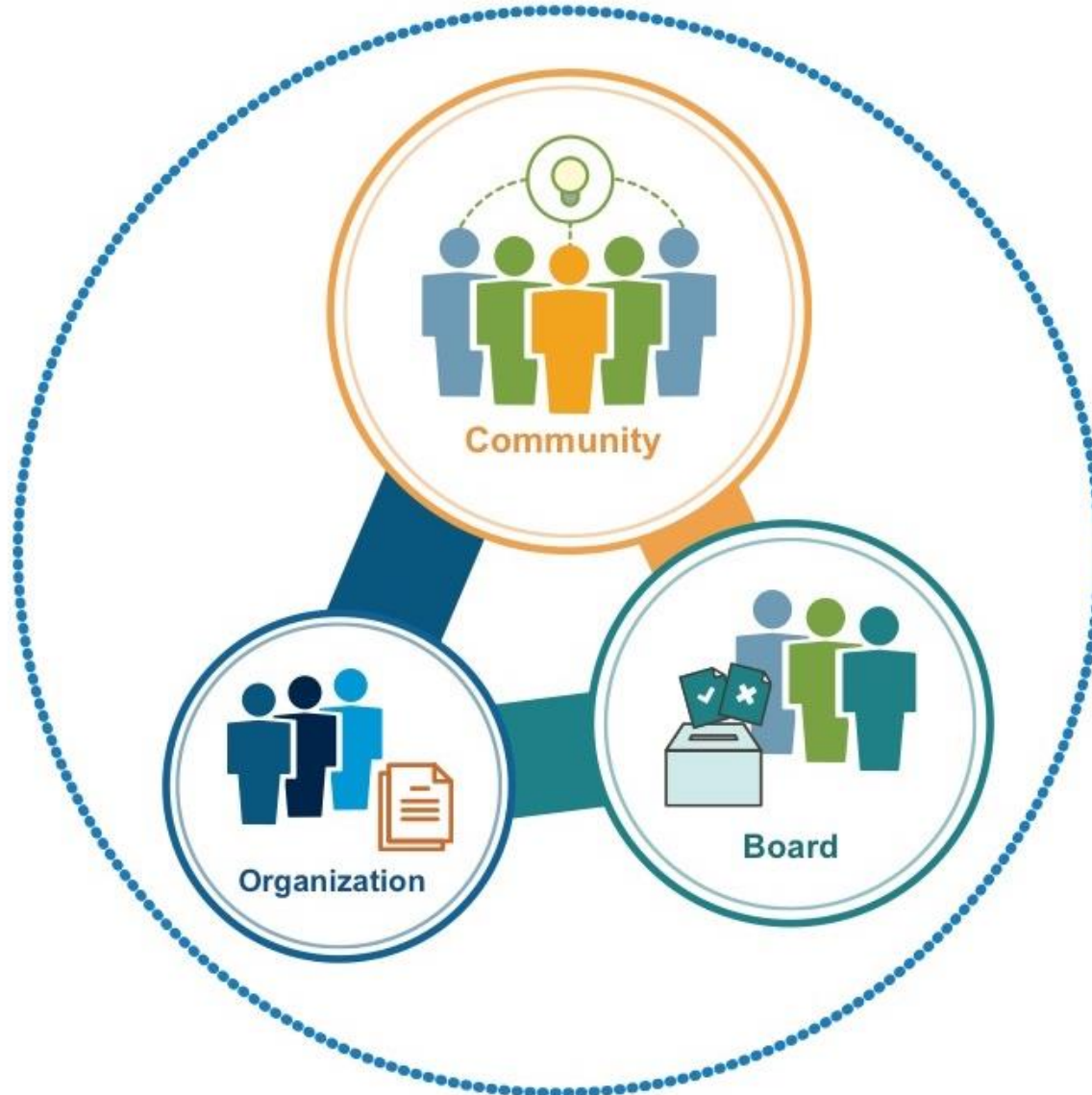
Google

bing



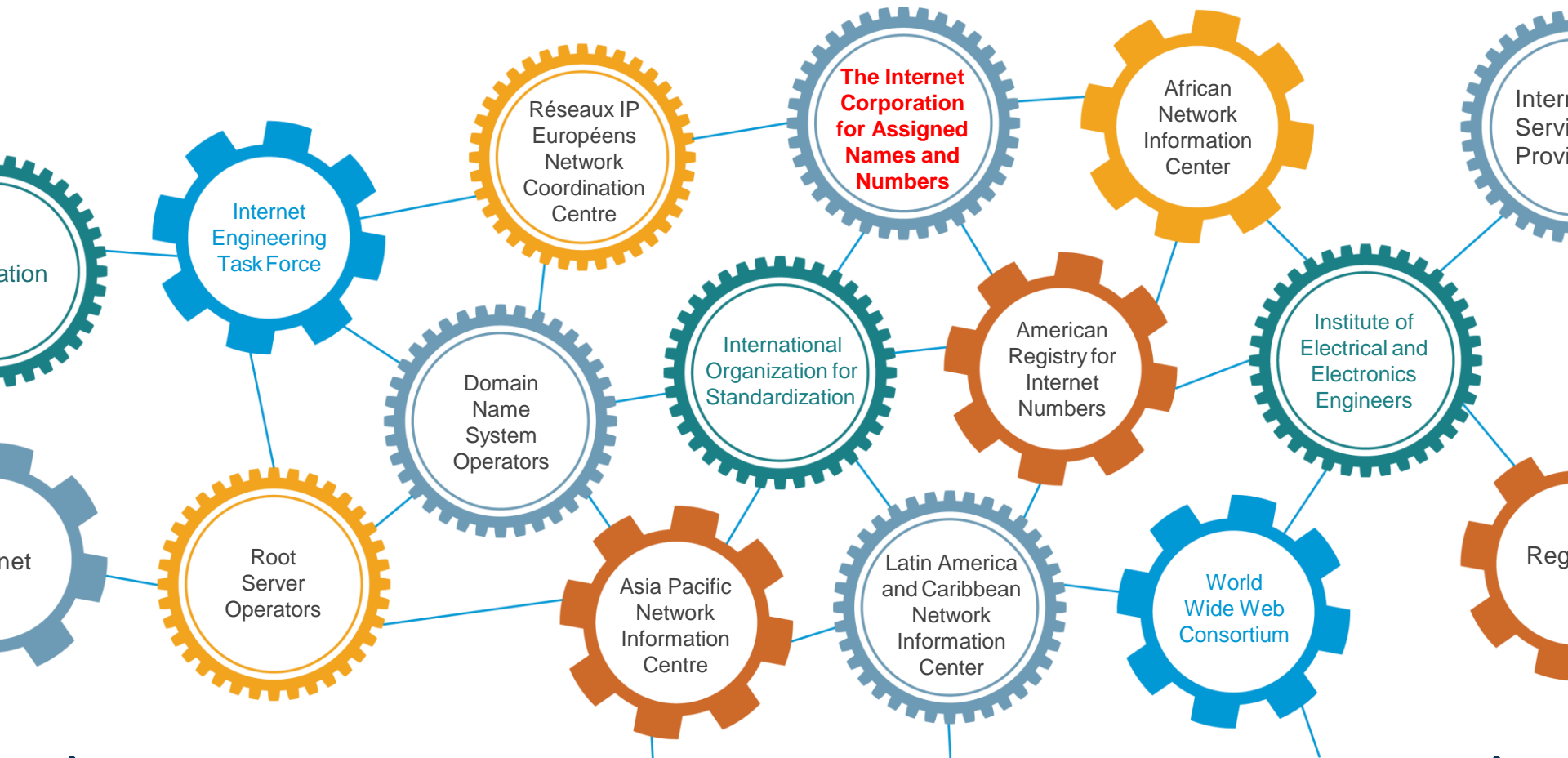
**ICANN is...**

# ICANN Ecosystem



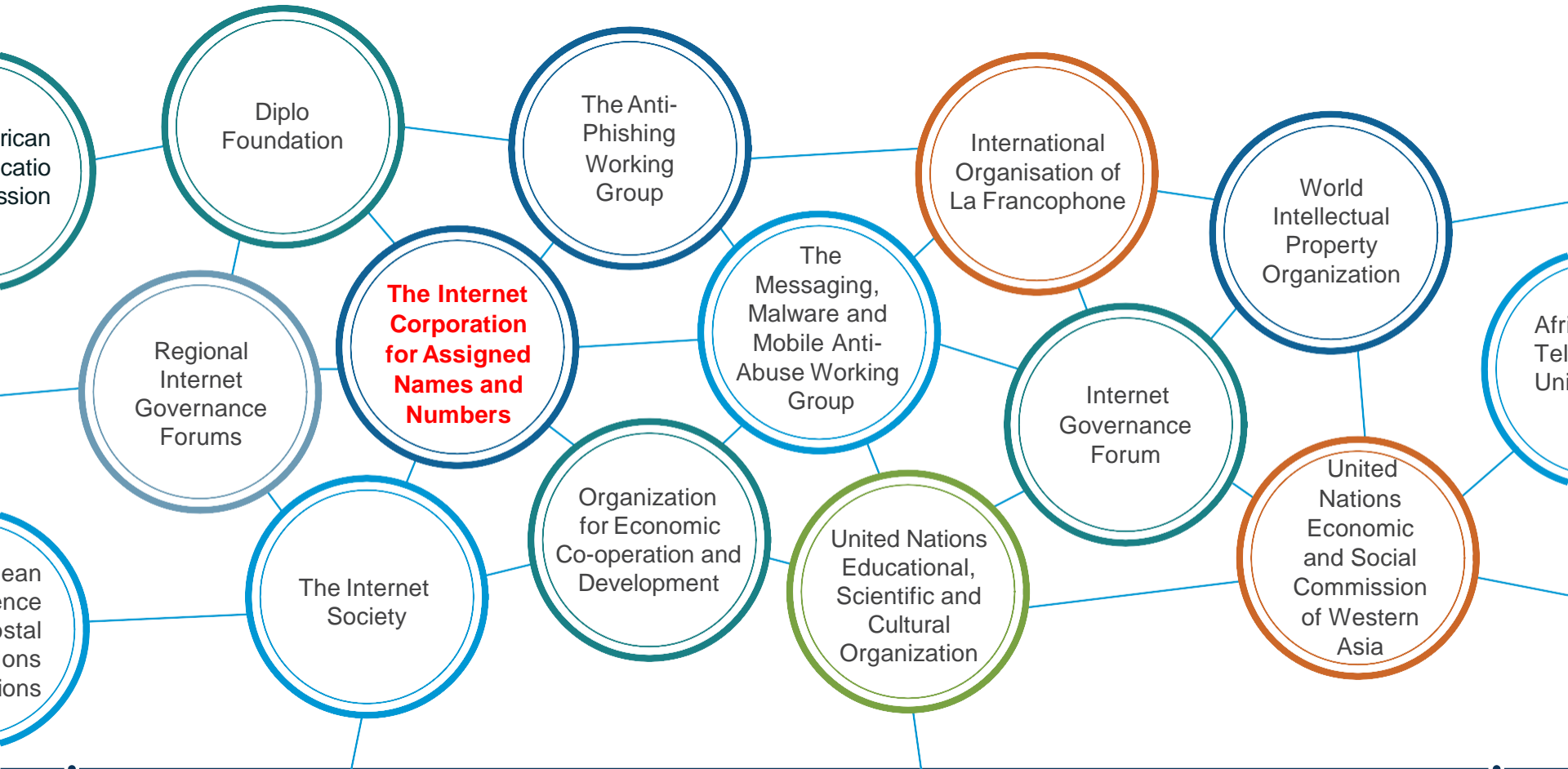
# ICANN + Technical Partners

Coordinating with our technical partners,  
we help make the Internet work.

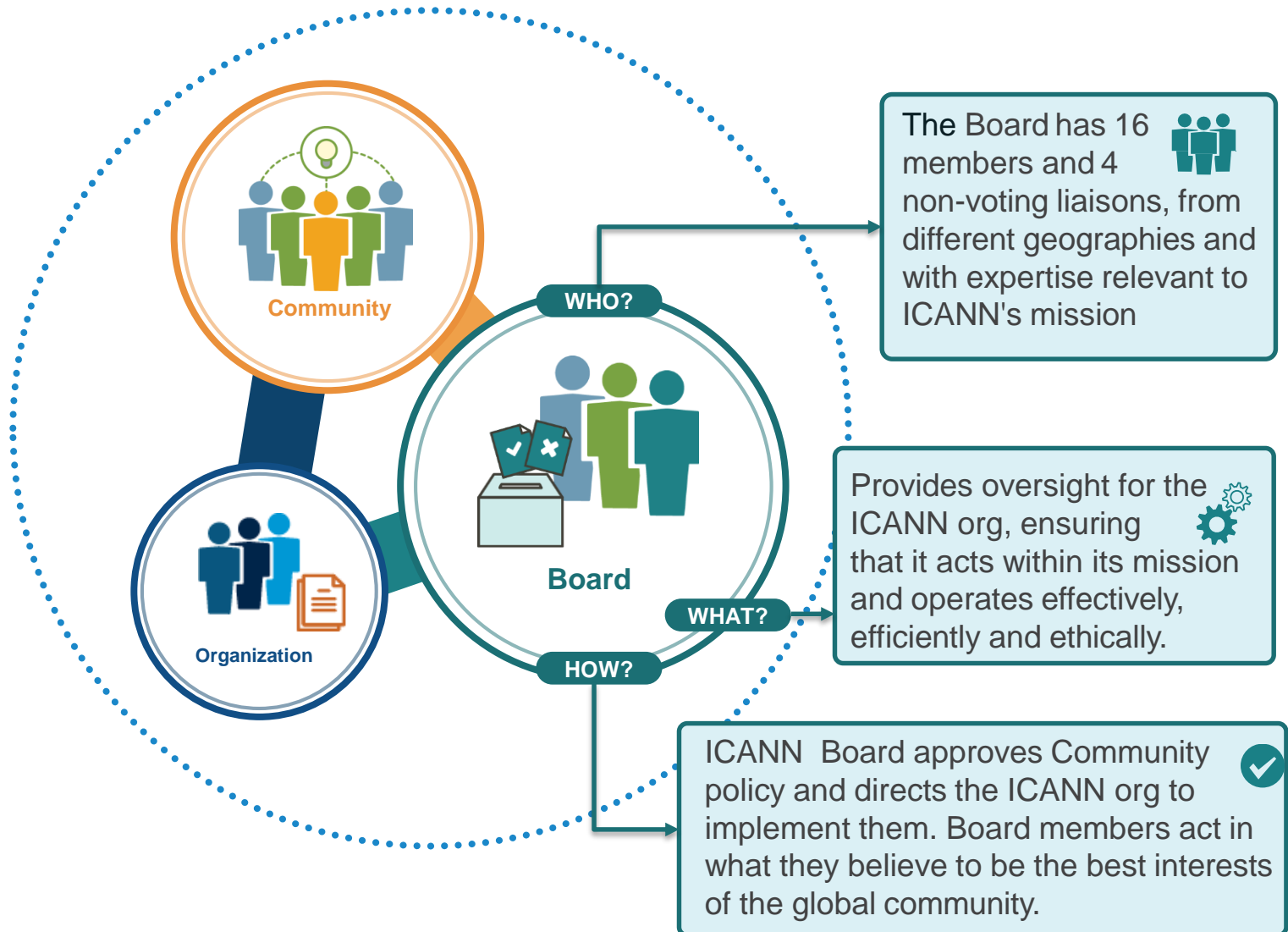


# ICANN + Other Partners

We all work together in different ways to help make the Internet work.



# The ICANN Board





# The ICANN Community



# ICANN Community: Supporting Organizations



## ASO

The ASO Address Council is composed of 15 volunteers — 3 from each of the Regional Internet Registries (RIRs)— who work on global Internet Protocol (IP) Address Policy.



## ccNSO

The ccNSO (Council and members) works on global policies relating to country code top-level domain name (ccTLD) policies (e.g., .br, .uk).



## GNSO

The GNSO Council is composed of 21 members — divided into 2 houses (contracted and non-contracted parties) — who work on generic top-level domain name (gTLD) policies (e.g., .com, new gTLDs).

## Supporting Organizations (SOs)

Three SOs in the ICANN community are responsible for developing policy recommendations in the areas they represent.

Address Supporting Organization (ASO)

Country Code Names Supporting Organization (ccNSO)

Generic Names Supporting Organization (GNSO)



# ICANN Community: Advisory Committees

## Advisory Committees (ACs)

Four ACs give advice and make recommendations on ICANN topics.

At-Large Advisory Committee (ALAC)

Governmental Advisory Committee (GAC)

Root Server System Advisory Committee (RSSAC)

Security and Stability Advisory Committee (SSAC)



### ALAC

The ALAC voices the interests of the individual Internet user and is composed of 15 members- 2 from each of the five Regional At-Large Organizations (RALOs) and 5 appointed by the ICANN Nominating Committee. It is supported by over 200 At-Large Structures (ALSes) and volunteers.



### GAC

The GAC provides advice on public policy issues, particularly on interactions with policies and national laws or international agreements.



### RSSAC

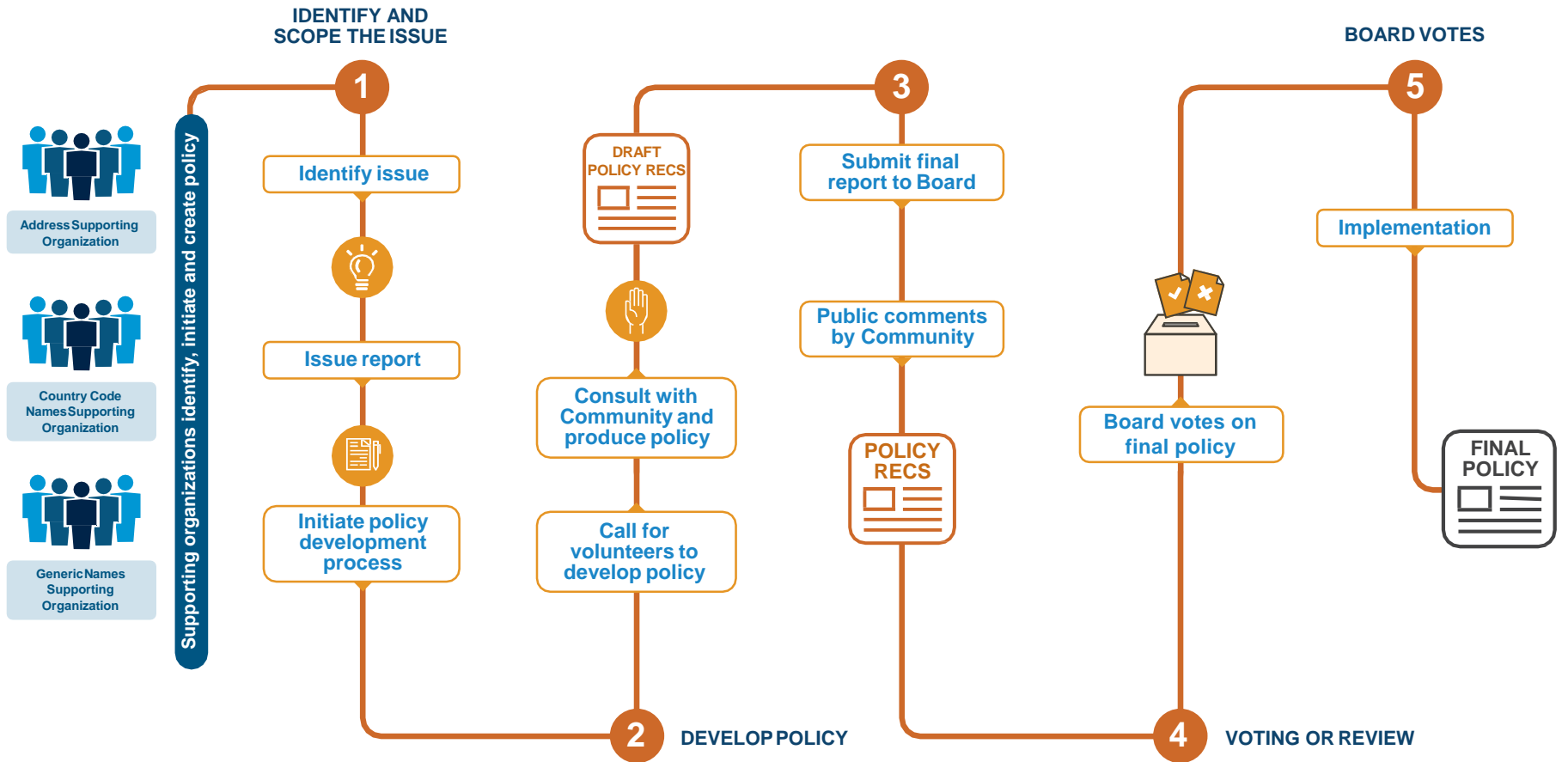
The RSSAC advises the ICANN community and Board on the operation, administration, security, and integrity of the Internet's Root Server System.



### SSAC

The SSAC advises on matters related to the security and integrity of the Internet's naming and address allocation systems.

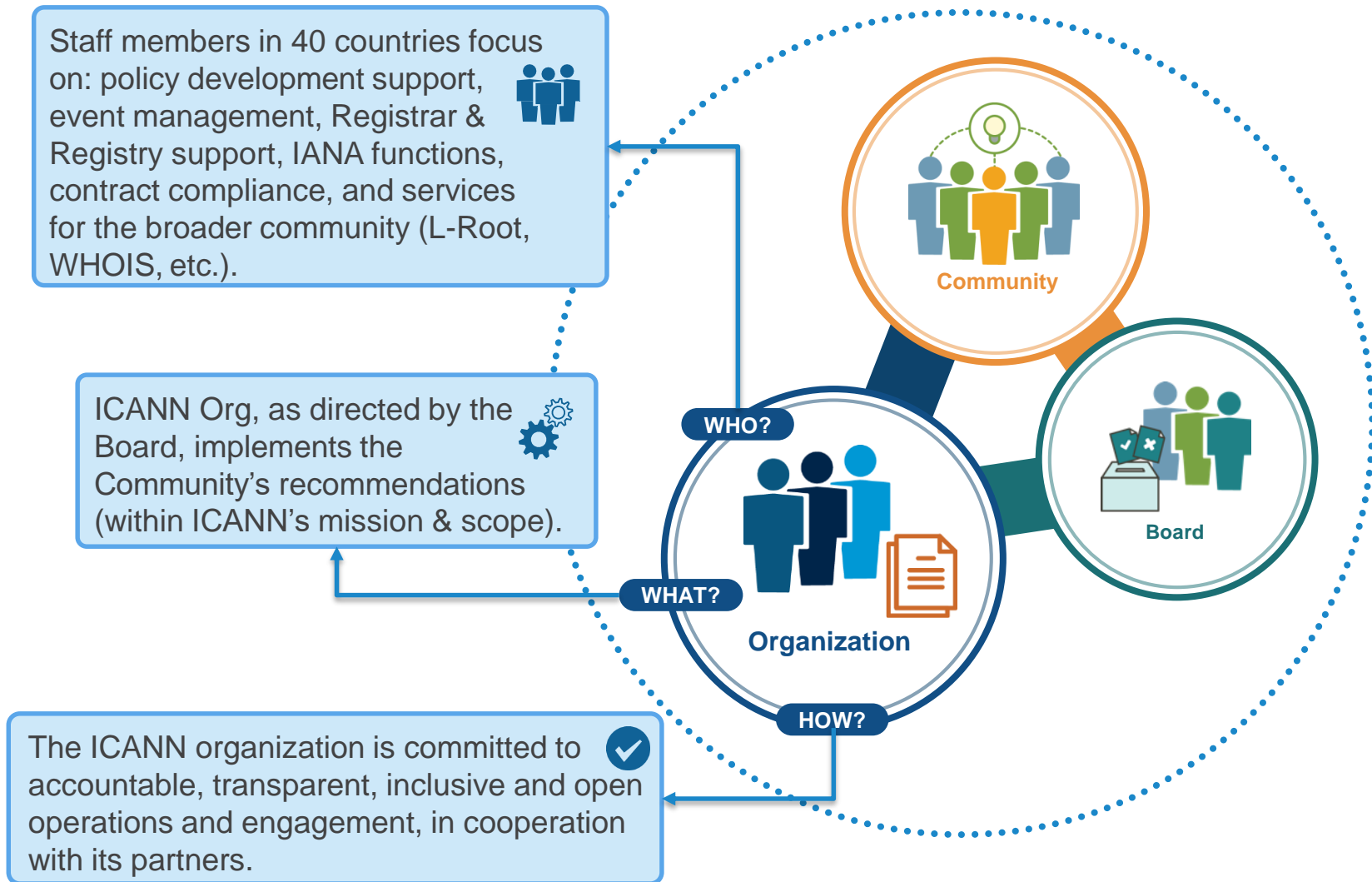
# How Does the Community Develop Policy?



Advisory Committees can participate during the process

- At-Large Advisory Committee
- Security and Stability Advisory Committee
- Root Server System Advisory Committee
- Government Advisory Committee

# The ICANN Organization



# ICANN's Mission

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The mission of the Internet Corporation for Assigned Names and Numbers (ICANN):

Ensure the stable and secure operation of the Internet's unique identifier systems as well as preserving and enhancing the **stability, security, resiliency, and openness** of the DNS and the Internet.

# What Does ICANN Mean for the End User?



The Domain Name System allows you to easily navigate the Internet. ICANN monitors for compliance with contracts, including review of complaints.



Policy Development is an inclusive, open and transparent process for the Community to create effective rules for the Internet



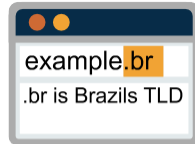
ICANN-Root is one of the root servers that helps keeps the DNS stable around the globe



Supporting and Growing the Community ensures diverse participants contribute to bottom-up, multistakeholder, consensus-driven policy



Generic Top-Level Domains provide choice in the domain name space.



Country Code Top-Level Domains allow countries to host their own websites



Protocol Parameters allow computers to talk to each other



Internet Protocol Addresses are the numbers that identify devices



Root Zone Management keeps the DNS running smoothly

# What is WHOIS

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WHOIS is a publicly available directory containing information about registered domains such as icann.org, including contact information for the registrant or registrar.

## Accurate WHOIS Data is important because it:



Ensures domain name holders receive renewal notices and important updates.



Reduces the chance of fraud – such as an unauthorized transfer or change.



Protects your domain name against suspension or deletion, which can happen if information is inaccurate or missing

# Key Players in Contractual Compliance



## **Internet Corporation for Assigned Names and Numbers (ICANN)**

Helps coordinate the world's Internet system of unique identifiers



## **Registries and Registrars**

To make sure you get to the correct Internet address, ICANN has contracts with domain name registering companies (Registrars) and organizations responsible for operating Top-Level domains longer than two characters (Registries) around the world



## **Contractual Compliance**

Contracts are enforced through Contractual Compliance. The mission is to preserve the security, stability and resiliency of the Domain Name System and to promote consumer trust through prevention, transparency and enforcement



## **Domain Name Holders**

When someone has a complaint about a domain name, a registrar or registry, Contractual Compliance is often the first stop to try and resolve the complaint. Its online complaint filing system is easy to use and most users can expect a resolution within 17 days of filing

# Internet Futures

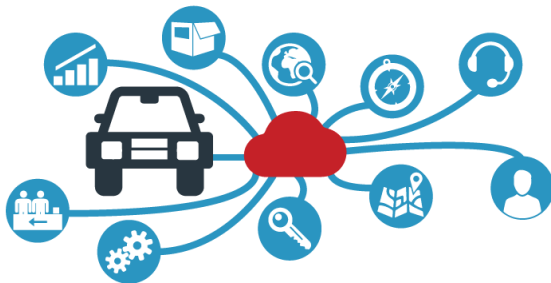
1. Ubertnet!
2. TLD Expansion
3. Augmented Reality, Ambient Technology, IoT
4. Internationalization
5. Your Turn!



# 1. Ubernet: Immersive, Invisible, Everywhere

## Ubiquitous Connectivity

The Internet is everywhere (wired, wireless, cell). Non-connectivity is the exception. Control is difficult to non-existent. (Mostly) futile fights over access will continue for some time.



## Presence-based Capabilities

Access & information so interwoven into daily life that it will become invisible. Location, condition, time input into automatic decisions by devices in the background.

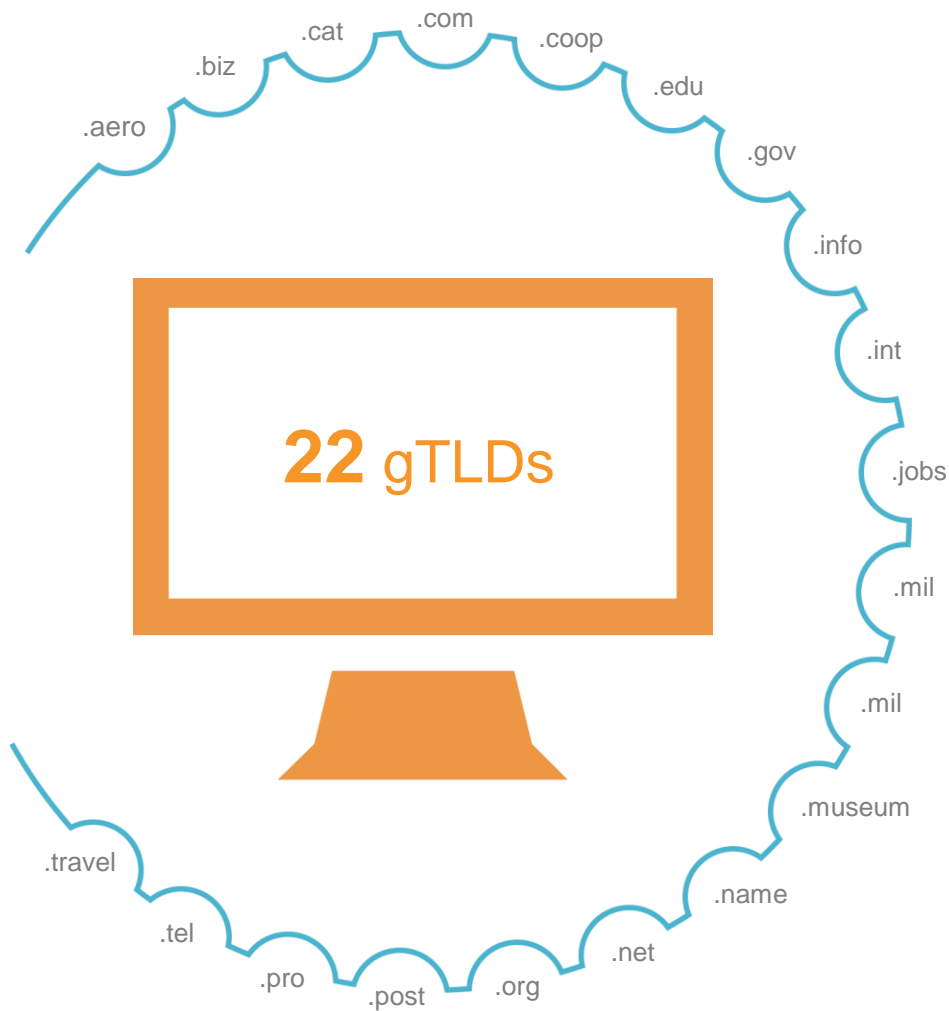
## Shared Experiences

Global relationships becoming common, diminished significance of national borders, creation of shared-interest “nations”.



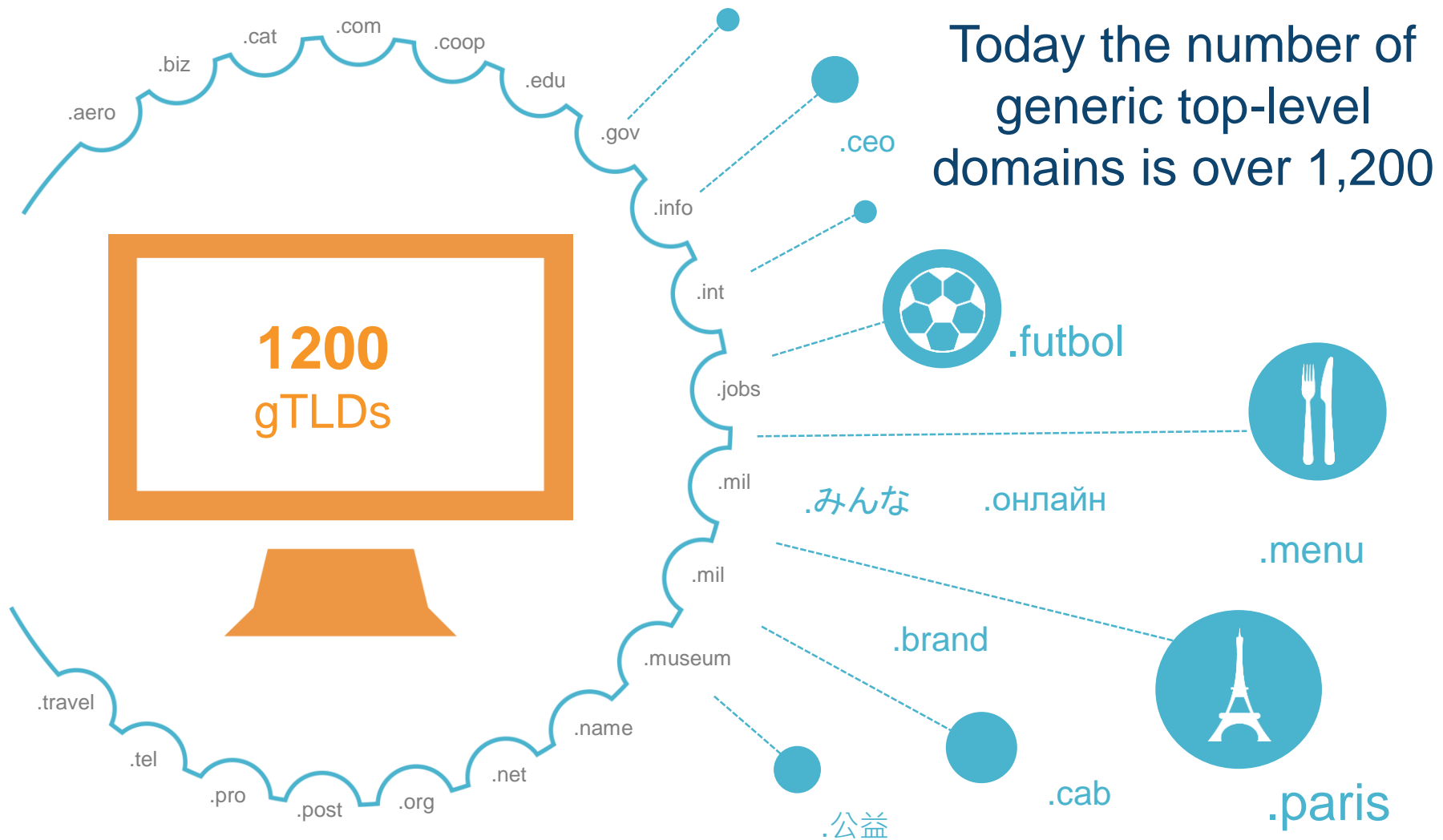
## 2. Expansion of TLDs

# Overview



Prior to 2013, there were 22 generic Top-Level Names

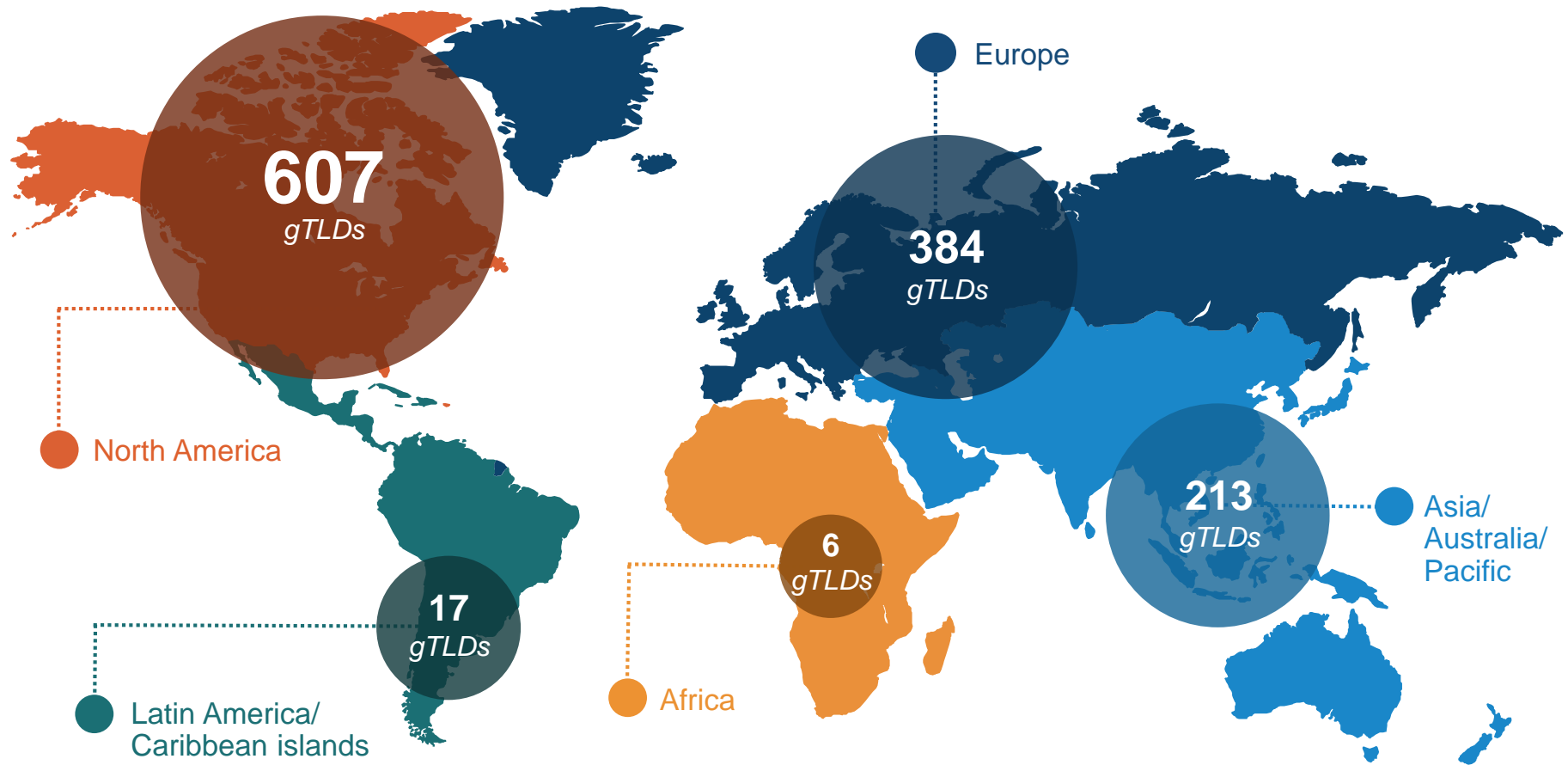
# Expansion of gTLDs



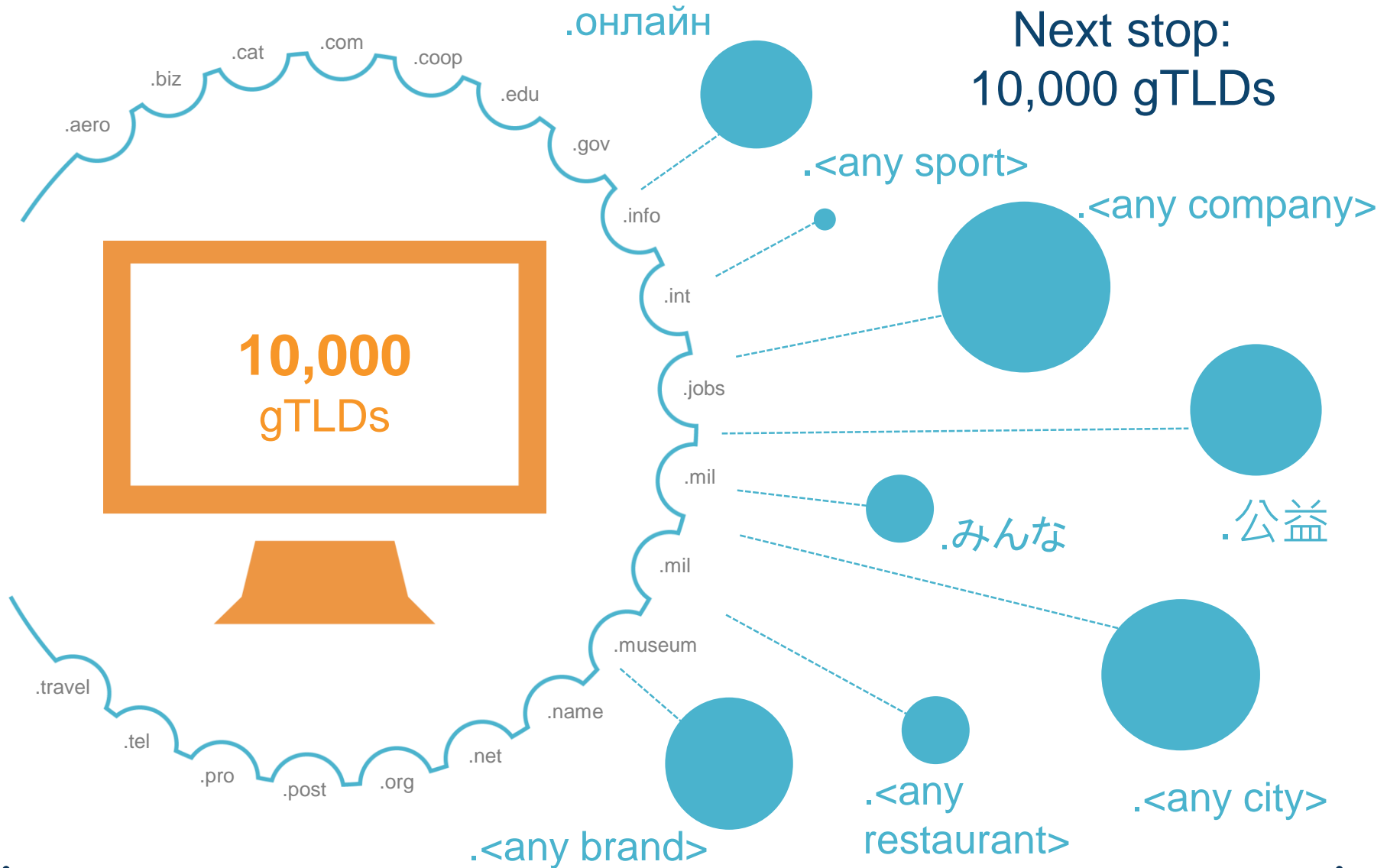
# 2012 Round Delegated gTLDs by ICANN Region

1227 Delegations as of July 2017

Region based on [Registry Public Contact](#)



# Expansion of gTLDs



# What does this mean?

**Continuous expansion  
of the Domain Name System**

**Innovation &  
Business Identification**

**Huge expansion of  
Internationalized Domain  
Names**

**Use the internet  
without any English  
characters**

**Managed by ICANN =  
Multistakeholder input**

**Streamlined process  
with security & stability**



# **3. Beyond the Keyboard: Augmented Reality, Ambient Tech, IoT**

# Beyond the Keyboard

## Augmented Reality over Internet

Augmented reality and portable devices give rapid feedback in everyday life, especially in health, mapping, and task instructions.

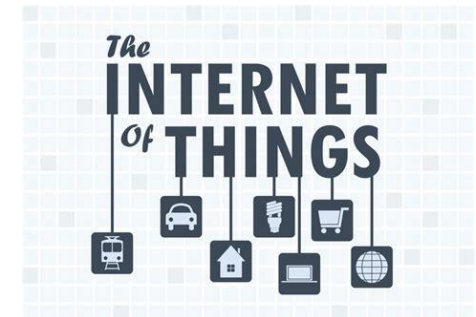


## Ambient Connections

Everybody without a keyboard (including illiterate) can still use the Internet. Sensors know when you're there, wearables give you control, voice recognition replaces the keyboard.

## IoT feeds the Internet

Automatic connections, silent input/output, automatic decisions & controls. People will be less aware of what they are reporting. Some have/have-not issues.



# 4. Internationalization

# Internet in any language

## URL (IDN) and Email

Internet started in English, but now supports all Unicode characters (about 150 scripts, >150 languages). Entire email and domain names can be in Unicode (Mailbox, TLD, SLD, etc.)



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## Universal Acceptance Readiness

Support for conversion efforts: definition, test beds, lessons learned, Industry progress



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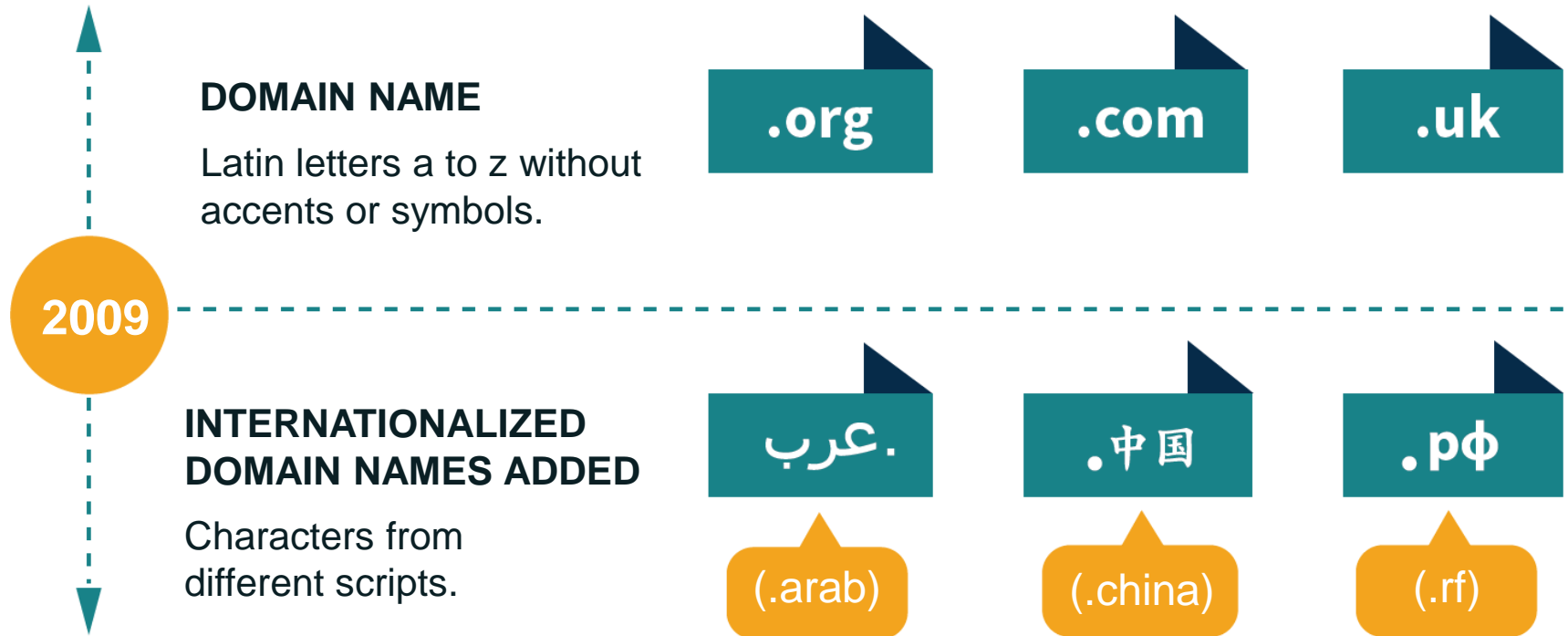
## Many Internets

With Top-Level Domains in non-English character sets, the entire Internet experience can be in that language, leading to separate markets and environments.

Интернет

אינטרנט  
インターネット  
الإنترنت

# What has changed with Top-Level Domains?



**All domain names should be treated equally.**

Including:



**пример.рф**

Internationalized  
Domain Names



**site.example**

New gTLDs



**名称@网站.域名**

Internationalized  
Email Addresses

# The Role of Universal Acceptance

## UA-ready

http://soap.organic

Welcome to organic

SOAP

We make the best soap in the world. It's 100% organic.

http://tokyo.ストア

TOKYO


当社の製品を購入します

http://bank.com


Bank

Email


 Email validated.  
Account created.

## Not ready

http://soap.organic




http://tokyo.ストア



http://bank.com

Bank

Email

 Not a valid email address.

# 5. Your turn!

## Another major change: TBD



# Engage at ICANN

?

Do you want to be in the vanguard of Internet expansion into new markets?

?

Do you want to shape open standards development and new technology?

?

Do you already devote resources to lobbying about Internet policy at the national level?

?

Do you already devote resources to lobbying about Internet policy at the national level?

?

Do you want to shape policy at the global level and know what is on the horizon?

?

Do you know if your competitors are already participating?

?

Do you want to be part of a growing and active community?

?

Do you see the Internet as a global shared resource worth supporting?

?

Do you want to defend the multistakeholder model?

# Who Drives the Internet?

**ICANN Workgroups**

**WGIG, UASG, GNSO**

**ICANN Meetings**

**3 times a year, around  
the world**

**Support Organizations**

**IETF, GSMA, IGMP**

# Engage at ICANN



## Issues discussed at ICANN impact your business

ICANN's work ranges relates to a broad range of Internet challenges, including policies on generic names that affect your network configuration and your brand or business practices online. Let your voice be heard on the issues that affect your business.



## ICANN is open to everyone

You can tailor your participation to your needs. Remote participation is available in several languages at all ICANN's public meetings. Issues open for public comment are listed on our website for all stakeholders to provide input.



## Take advantage of our multistakeholder model

Not only is ICANN open to everyone, everyone participates on equal footing. This makes it a unique place to interact with and learn from representatives from different sectors such as academia and government.

# Get Involved and Informed



**Attend an ICANN Public Meeting.** Three times a year, ICANN holds free and open public meetings in different regions around the world. Visit [meetings.icann.org](https://meetings.icann.org) to learn more.



Visit [go.icann.org/journey](https://go.icann.org/journey) to learn how you can attend an ICANN Public Meeting as part of the NextGen@ICANN or ICANN Fellowship programs.



Take a free online course at [learn.icann.org](https://learn.icann.org).



Attend events in your region.



Find and participate in an ICANN community group by visiting [icann.org/community](https://icann.org/community).



Sign up for ICANN news alerts and regional newsletters.

# Upcoming Meetings



<b>ICANN</b> ANNUAL GENERAL	<b>60</b>
<b>ABU DHABI</b> 28 October–3 November 2017	

<b>ICANN</b> COMMUNITY FORUM	<b>61</b>
<b>SAN JUAN</b> 10–15 March 2018	

To find out how to participate, go to:  
<https://meetings.icann.org/en/about>



For a schedule of past and upcoming meetings, go to:  
<http://meetings.icann.org/calendar>



If you belong to an organization that is interested in having an exhibit at a meeting or in sponsoring a meeting, please contact:  
[meeting-sponsorship@icann.org](mailto:meeting-sponsorship@icann.org)





One World, One Internet

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